ABSTRACT OF THE DISCLOSURE

Disclosed is a duobinary optical transmission apparatus using a semiconductor optical amplifier (SOA). The duobinary optical transmission apparatus includes a light source for generating a carrier wave; a duobinary precoder for encoding an input (non return to zero) electric signal; a semiconductor optical amplification unit to amplify the encoded signal from the duobinary precoder, wherein the amplification unit receives an optical amplification gain difference that varies with a bias current combined with the encoded signal; and an optical band pass filter for receiving a phase-modulated optical signal from the semiconductor optical amplification unit, filtering the received optical signal to a prescribed bandwidth, and thereby generates a duobinary optical signal.